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ABSTRACT

An arrangement of fins or other convective heat transfer surfaces which provides an improved value of heat transfer per unit pressure drop of the flowing fluid, for a defined geometric envelope. There are at least two flowpaths in parallel. Each flowpath contains a wide densely-surfaced region, called a heat transfer region, which accomplishes heat transfer at a reduced velocity whereby the ratio of heat transfer to pressure drop for that region is improved. In series with that region, in the same flowpath, is a narrow sparsely-surfaced region, called a fluid flow region, which serves to transport the fluid, at higher velocity but with minimal pressure drop, through the region(s) not densely-surfaced. The respective wide and narrow regions can be oppositely placed so that the overall arrangement maintains a constant width dimension so as to resemble conventional design. The invention is applicable to both forced and natural convection, and to laminar transition or turbulent flow, and is particularly applicable to gas side heat exchange.